UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/908,963	07/19/2001	Itshak Bergel	INTL-0603-US (P11744)	1926

21906 7590 12/14/2005

TROP PRUNER & HU, PC
8554 KATY FREEWAY
SUITE 100
HOUSTON, TX 77024

EXAMINER	
SMITH, SHEILA B	

ART UNIT	PAPER NUMBER
2681	

DATE MAILED: 12/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/908,963	BERGEL, ITSHAK	
	Examiner	Art Unit	
	Sheila B. Smith	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) *27-30* is/are allowed.

6)☐ Claim(s) *1-4,6,10-13,15,16 and 22-26* is/are rejected.

7)☐ Claim(s) *5,7-9,14 and 17-21* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-4,6,10-13, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchi et al. (U.S. Patent Number 6,748,024) in view of Sadri (U.S. Patent Number 6,690,652).

Regarding claims 1,12, Kuchi et al. discloses all the claimed invention as set fourth in the instant application, also Kuchi et al. discloses a non-zero complex weighted space-time code for multiple antenna transmission, in addition Kuchi et al. discloses a determining channel, channel prediction terms (which reads on scrambling code 502a) for a channel from both first channel estimation terms (which reads on scrambling code 506a) derived from first common pilot channel signal (which reads on column 9 lines 1-15) and second channel estimation terms (502b)derived from second common pilot channel signal (506b). However, Kuchi fails to specifically discloses enabling control over future transmission patterns of the channel using the channel prediction terms.

In the same field of endeavor, Sadri discloses a adaptive power control in wideband CDMA cellular systems and methods of operation. In addition Sadri discloses the use of a enabling control over future transmission patterns of the channel using the channel prediction terms (which reads on column 3 lines 58-67 and column 4 lines 1-17).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Kuchi in view of prior art by modifying a non-zero complex weighted space-time code for multiple antenna transmission with the use of a enabling control over future transmission patterns of the channel using the channel prediction terms, as taught by Sadri for the purpose of saving on waste of transmit power.

Regarding claims 2, Kuchi et al. in view of Sadri discloses all the claimed invention as set fourth in the instant application, in addition Kuchi et al. discloses a predicting a future state of the channel at a specified time based on the channel prediction terms (which reads on column 9 lines 1-15).

Regarding claims 3, Kuchi et al. in view of Sadri discloses all the claimed invention as set fourth in the instant application, in addition Kuchi et al. discloses a storing the first and second channel estimation terms in order to determine the channel prediction terms in response to the first and second common pilot channel signals respectively (which reads on column 9 lines 1-15).

Regarding claims 4, 9, Kuchi et al. in view of Sadri discloses all the claimed invention as set fourth in the instant application, in addition Kuchi et al. discloses a adaptively calculating the channel prediction terms from the first and second channel estimation terms in one or more iterations (which reads on column 9 lines 1-15).

Regarding claim 6, Kuchi et al. in view of Sadri discloses all the claimed invention as set fourth in the instant application, in addition Kuchi et al. discloses calculating includes receiving one or more weighted values associated with one or more antennas of a plurality of

antennas (1-4 of figure 1a) where said first common pilot channel signal is from a first antenna of the plurality of antennas and said second common pilot channel signal is from a second antenna of the plurality of antennas (which reads on column 9 lines 1-15).

Regarding claim 10, Kuchi et al. in view of Sadri discloses all the claimed invention as set fourth in the instant application, in addition Kuchi et al. discloses a first estimation terms correspond to a channel estimation term calculated in at least one iteration prior to a current iteration of the one or more iterations (which reads on column 9 lines 1-15).

Regarding claim 11, Kuchi et al. in view of Sadri discloses all the claimed invention as set fourth in the instant application, in addition Kuchi et al. discloses the second channel estimation terms correspond to a channel estimation term calculated in the current iteration (which reads on column 9 lines 1-15).

Regarding claim 13, Kuchi et al. in view of Sadri discloses all the claimed invention as set fourth in the instant application, in addition Kuchi et al. discloses provide feedback having the at least one weighted value of the one or more weighted values to the first and second antennas of the plurality of antennas (which reads on column 9 lines 1-15).

2. Claims 15,16,22-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Kuchi et al. in view of Sadri and further in view of Komatsu (U.S. Patent Publication 2001/0046873).

Regarding claims 15,16, Kuchi discloses everything claimed, as applied above (see claims 1) additionally Kuchi discloses channel prediction terms (502a) from both first channel estimation terms (506a) derived from first common pilot channel signal (which reads on column 8 lines 66-67 and column 9 lines 1-15) and second channel estimation terms (506b) derived from second common pilot channel signal (which reads on paragraphs 0077); and enabling control

over future transmission patterns of the channel using the channel prediction terms (which reads S1S2 and column 9 lines 1-15) and exhibited in figure 5. However, Kuchi fails to specifically discloses (a) enabling control over future transmission patterns of the channel using the channel prediction terms and (b) a communication interface; and a processor communicatively coupled to the communication interface.

In the same field of endeavor, Sadri discloses a adaptive power control in wideband CDMA cellular systems and methods of operation. In addition Sadri discloses the use of a (a) enabling control over future transmission patterns of the channel using the channel prediction terms (which reads on column 3 lines 58-67 and column 4 lines 1-17).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Kuchi in view of prior art by modifying a non-zero complex weighted space-time code for multiple antenna transmission with the use of a enabling control over future transmission patterns of the channel using the channel prediction terms, as taught by Sadri for the purpose of saving on waste of transmit power.

In the same field of endeavor, Komatsu discloses a mobile terminal for transmission diversity CDMA communication system. In addition Komatsu discloses the use of a communication interface (9); and a processor (20) communicatively coupled to the communication interface (9), (which reads on paragraphs 0042).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to improve Kuchi in view of prior art by modifying a non-zero complex weighted space-time code for multiple antenna transmission with the use of a communication

interface, and a processor communicatively coupled to the communication interface, as taught by Komatsu for the purpose of saving on waste of transmit power.

Regarding claims 22-24, they disclose an apparatus corresponding to the method of claims 1-4. The apparatus is inherent in that it simply provides structure for the logical implementation found in claims 1-4.

Regarding claims 25,26, Kuchi discloses in view of Sadri and further in view of Komatsu discloses all the claimed invention as set fourth in the instant application, in addition Kuchi et al. discloses provide feedback having the at least one weighted value of the one or more weighted values to the first and second antennas of the plurality of antennas (which reads on and column 9 lines 1-15).

Allowable Subject Matter

4. Claims 5,7-8,14,17-21; objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims 27-30 are allowed.

Response to Arguments

6. Applicant's arguments with respect to claims 1-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheila B. Smith whose telephone number is (571)272-7847. The examiner can normally be reached on Monday-Thursday 6:00 am - 3:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

S. Smith
December 10, 2005

JOSEPH FEILD
SUPERVISORY PATENT EXAMINER